

Table 10. LSD and Chemical Warfare Exposures in the 320 Subjects

| | | |
|------------------------|-----|---------|
| A. LSD given | 281 | (87.5%) |
| LSD not given | 39 | (12.5%) |
| B. Other agents given | 117 | (36.5%) |
| Other agents not given | 203 | (63.5%) |

Table 11. exposures to potentially toxic Agents in 320 Subjects

| | |
|---|---------|
| <u>Industrial Chemicals</u> | |
| Aniline dyes | (n= 1) |
| Ammonia anhydrous | (n= 1) |
| Benzene | (n= 4) |
| Carbon tetrachloride | (n= 8) |
| Chloracetyl Chloride | (n= 1) |
| Chromic acid | (n= 2) |
| DEA | (n= 1) |
| Epoxy | (n= 8) |
| Freon | (n= 1) |
| Methylene chloride | (n= 1) |
| *Nitrogen, liquid | (n= 1) |
| Paint products | (n= 1) |
| Pesticides | (n= 11) |
| *Photographic chemicals | (n= 1) |
| Plastics | (n= 8) |
| Trichloroethane and other trichlor solvents | (n= 9) |
| <u>Airborne Pollutants</u> | |
| Asbestos | (n= 1) |
| Coal dust | (n= 3) |
| Fiberglass particles | (n= 6) |
| Foundry fumes | (n= 3) |
| Gasoline fumes | (n= 1) |
| Hemp mill dust | (n= 3) |
| Smoke | (n= 1) |
| <u>Heavy Metal</u> | |
| Arsenic | (n= 3) |
| Beryllium | (n= 1) |
| Cadmium | (n= 1) |
| Lead | (n= 3) |
| Mercury | (n= 5) |
| <u>Radiation</u> | |
| microwave | (n= 6) |
| Nuclear radiation | (n= 21) |
| <u>Military Chemical Agents</u> | |
| Agent Orange | (n= 3) |
| CS | (n= 2) |
| Chlorine gas | (n= 2) |
| "G" Agent | (n= 1) |
| Mustard gas | (n= 1) |
| "Nerve gas" | (n= 1) |
| Phosgene | (n= 2) |
| Tear gas | (n= 1) |
| <u>Miscellaneous</u> | |
| Amphetamines | (n= 1) |

*Ordinarily non-toxic

Table 12. Deceased Subjects: Cause of Death, Date of Birth, Age

| | | Date of Death | Age | Cause |
|-----|--------|---------------------|-----|--|
| 1. | F.B.A. | 1/55 | 44 | Atrophic lateral sclerosis |
| 2. | F.J.B. | ? | ? | Myocardial infarction |
| 3. | J.H.B. | 8/64 | 66 | Myocardial infarction |
| 4. | W.C. | 8/75 | 42 | Cardiac arrest |
| 5. | R.C. | ? | ? | Killed in action, RVN |
| 6. | G.E.D. | 5/63 | 51 | Suicide (GSW with cerebral hemorrhage) |
| 7. | W.E.D. | 12/74 | 42 | Commercial airline crash |
| 8. | G.A.G. | 1/67 | ? | Helicopter crash |
| 9. | M.L.G. | 10/68 | 42 | Myocardial infarction |
| 10. | M.C.H. | ? | ? | Unknown |
| 11. | E.H. | 7/73 | 46 | GSW, suicide undetermined |
| 12. | W.H.H. | ? | ? | Unknown |
| 13. | J.R.H. | 4/70 | 48 | Metastatic cancer of stomach |
| 14. | P.E.M. | 7/70 | 52 | Metastatic cancer |
| 15. | J.S.M. | 10/74 | 62 | Myocardial infarction |
| 16. | R.M. | 8/75 | 50 | Cardiac arrest |
| 17. | C.J.M. | 3/74 | 40 | Heart failure |
| 18. | D.H.T. | 11/72 | 53 | Myocardial infarction |
| 19. | J.G.W. | ? | ? | Myocardial infarction |
| 20. | A.A.W. | 1/70 | 51 | Emphysema |
| 21. | A.B.W. | ? | ? | Killed in action, RVN |
| 22. | G.W.S. | 2/76 | 40 | Myocardial infarction |
| 23. | C.J.M. | 3/74 | 40 | Heart failure |
| 24. | D.L.G. | 1/76 | ? | Unknown |

Table II. Exposures to Potentially Toxic Agents in 320 Subjects

| | |
|---|---------|
| <u>Industrial Chemicals</u> | |
| Aniline dyes | (n= 1) |
| Ammonia anhydrous | (n= 1) |
| Benzene | (n= 4) |
| Carbon tetrachloride | (n= 8) |
| Chloroacetyl Chloride | (n= 1) |
| Chromic acid | (n= 2) |
| DEA | (n= 1) |
| Epoxy | (n= 8) |
| Freon | (n= 1) |
| Methylene chloride | (n= 1) |
| *Nitrogen, liquid | (n= 1) |
| Paint products | (n= 1) |
| Pesticides | (n= 11) |
| *Photographic chemicals | (n= 1) |
| Plastics | (n= 8) |
| Trichloroethane and other trichlor solvents | (n= 9) |
| <u>Airborne Pollutions</u> | |
| Asbestos | (n= 1) |
| Coal dust | (n= 3) |
| Fiberglass particles | (n= 6) |
| Foundry fumes | (n= 3) |
| Gasoline fumes | (n= 1) |
| Hemp mill dust | (n= 3) |
| Smoke | (n= 1) |
| <u>Heavy Metal</u> | |
| Arsenic | (n= 3) |
| Beryllium | (n= 1) |
| Cadmium | (n= 1) |
| Lead | (n= 3) |
| Mercury | (n= 5) |
| <u>Radiation</u> | |
| microwave | (n= 6) |
| Nuclear radiation | (n= 21) |
| <u>Military Chemical Agents</u> | |
| Agent Orange | (n= 3) |
| CS | (n= 2) |
| Chlorine gas | (n= 2) |
| "G" Agent | (n= 1) |
| Mustard gas | (n= 1) |
| "Nerve gas" | (n= 1) |
| Phosgene | (n= 2) |
| Tear gas | (n= 1) |
| <u>Miscellaneous</u> | |
| Amphetamines | (n= 1) |

*Ordinarily non-toxic

Table 13. Discharge (Present) Diagnoses in Order of Frequency of the 220 LSD Follow-up Subjects Evaluated as In-Patients

| | |
|--|--------|
| 1. Hearing loss | (n=88) |
| 2. Hypertension | (n=42) |
| 3. Hypertriglyceridemia | (n=18) |
| 4. Obesity | (n=16) |
| 5. Hemorrhoids | (n=15) |
| 6. Depression | (n=10) |
| 7. Habitual excessive use of alcohol | (n=10) |
| 8. Tension headache | (n=10) |
| 9. Nasal septal defect | (n= 9) |
| 10. Osteoarthritis, generalized | (n= 9) |
| 11. Osteoarthritis, spinal | (n= 8) |
| 12. Low back pain | (n= 8) |
| 13. Benign prostatic hypertrophy | (n= 7) |
| 14. Arteriosclerotic cardiovascular disease with myocardial infarction | (n= 6) |
| 15. Gout | (n= 6) |
| 16. Organic brain syndrome | (n= 6) |
| 17. Peptic ulcer disease | (n= 6) |
| 18. Angina pectoris | (n= 5) |
| 19. Hiatus hernia | (n= 5) |
| 20. Glaucoma | (n= 5) |
| 21. Tremor | (n= 5) |
| 22. Anxiety neurosis | (n= 4) |
| 23. Diabetes mellitus | (n= 4) |
| 24. Tinea pedis | (n= 4) |
| 25. Emphysema | (n= 4) |
| 26. Arteriosclerotic cardiovascular disease with hypertension | (n= 4) |
| 27. Peripheral neuropathy | (n= 4) |
| 28. Bursitis, shoulder | (n= 4) |
| 29. Myopia | (n= 4) |
| 30. Impotence, psychogenic | (n= 4) |
| 31. Adjustment reaction of adult life | (n= 4) |
| 32. Prostatitis | (n= 4) |
| 33. Hypercholesterolemia | (n= 3) |
| 34. "Chemical" diabetes | (n= 3) |
| 35. Sebaceous cysts | (n= 3) |
| 36. Cardiac arrhythmia | (n= 3) |
| 37. Personality disorder, not specified | (n= 3) |
| 38. Alcoholism | (n= 3) |
| 39. Migraine | (n= 3) |
| 40. Vertigo | (n= 3) |
| 41. Bronchitis | (n= 3) |
| 42. Episodic excessive drinking | (n= 3) |

Table 13 (cont)

| | |
|---|-------|
| 43. Benign neoplasm of mouth | (n=3) |
| 44. Nasal polyps | (n=2) |
| 45. Strabismus | (n=2) |
| 46. Linea cruris | (n=2) |
| 47. Hematuria | (n=2) |
| 48. Cataract, traumatic | (n=2) |
| 49. Syncope | (n=2) |
| 50. Arteriosclerosis, diffuse | (n=2) |
| 51. Amnesia | (n=2) |
| 52. Macular degeneration | (n=2) |
| 53. Hay fever | (n=2) |
| 54. Conjunctivitis | (n=2) |
| 55. Seborrheic keratosis | (n=2) |
| 56. Seborrhea | (n=2) |
| 57. X-ray evidence of old tuberculosis | (n=1) |
| 58. Arthritis, traumatic | (n=1) |
| 59. Allergic dermatitis | (n=1) |
| 60. Hysterical neurosis | (n=1) |
| 61. Anemia, non-specific | (n=1) |
| 62. Cyclothymic personality | (n=1) |
| 63. Visual distortion, transient | (n=1) |
| 64. Viral warts | (n=1) |
| 65. Manic/depressive illness | (n=1) |
| 66. Inguinal hernia | (n=1) |
| 67. Urethritis, non-specific | (n=1) |
| 68. Gilbert's disease | (n=1) |
| 69. Traumatic amputation, finger | (n=1) |
| 70. Leukopenia | (n=1) |
| 71. Metastatic cancer | (n=1) |
| 72. Retinal vitreous adhesion | (n=1) |
| 73. Arteriosclerosis, focal | (n=1) |
| 74. Tumor of cartilage | (n=1) |
| 75. Paralysis, cerebral | (n=1) |
| 76. Psychomotor seizures | (n=1) |
| 77. Condyloma accuminata | (n=1) |
| 78. Heroin addiction | (n=1) |
| 79. Nose deformity | (n=1) |
| 80. Senile keratosis | (n=1) |
| 81. Eosinophilia | (n=1) |
| 82. Late effect, injury to nerve of forearm | (n=1) |
| 83. Hydrocele | (n=1) |
| 84. Sialoadenitis | (n=1) |
| 85. Heartblock | (n=1) |
| 86. Pleurodynia | (n=1) |
| 87. Muscle disease, unspecified | (n=1) |
| 88. X-ray evidence of old granuloma | (n=1) |
| 89. Chronic rhinitis | (n=1) |

Table 13 (cont)

| | |
|---|-------|
| 90. Anemia of chronic disease | (n=1) |
| 91. Brain metastases, multiple | (n=1) |
| 92. Amblyopia | (n=1) |
| 93. Late effect; fracture of leg | (n=1) |
| 94. Retinopathy | (n=1) |
| 95. Corneal dystrophy | (n=1) |
| 96. Esotropia | (n=1) |
| 97. Bursitis, multiple sites | (n=1) |
| 98. Mucositis | (n=1) |
| 99. Antisocial personality | (n=1) |
| 100. Lipoma | (n=1) |
| 101. Neoplasm, benign, lung | (n=1) |
| 102. Anemia, iron deficiency | (n=1) |
| 103. Congestive heart failure | (n=1) |
| 104. Asthma | (n=1) |
| 105. Organic brain syndrome, alcoholic | (n=1) |
| 106. "Nervous breakdown" | (n=1) |
| 107. Testicular atrophy | (n=1) |
| 108. Hypophosphatemia | (n=1) |
| 109. Renal glycosuria | (n=1) |
| 110. Pilonidal cyst | (n=1) |
| 111. Chorioretinitis | (n=1) |
| 112. Jaundice, secondary to alcoholic hepatitis | (n=1) |
| 113. Cerebral degeneration | (n=1) |
| 114. Aphasia | (n=1) |
| 115. Varicocele | (n=1) |
| 116. Benign neoplasm of penis | (n=1) |
| 117. Hepatitis, non-infectious | (n=1) |
| 118. Obsessive phobia | (n=1) |
| 119. Nasal septal perforation | (n=1) |
| 120. Bronchogenic carcinoma | (n=1) |

Table 14. Diagnoses Listed in "Past Medical History" Portion of Narrative
Summaries of In-Patient LSD Follow-up Subjects Arranged in Order of Frequency

| | |
|----------------------------------|--------|
| 1. Hemorrhoids | (n=22) |
| 2. Headache, muscle tension | (n=22) |
| 3. Concussion | (n=18) |
| 4. Habitual excessive drinking | (n=12) |
| 5. Vasectomy | (n=11) |
| 6. Gonorrhea | (n=11) |
| 7. Kidney stones | (n=10) |
| 8. Sinusitis, chronic | (n=7) |
| 9. Pneumococcal pneumonia | (n=7) |
| 10. Lumbalgia | (n=7) |
| 11. Heartburn | (n=6) |
| 12. Malaria | (n=6) |
| 13. Hepatitis | (n=6) |
| 14. Peptic ulcer | (n=6) |
| 15. Tonsillectomy | (n=6) |
| 16. Bronchitis | (n=5) |
| 17. Hay fever | (n=5) |
| 18. Hypertension | (n=5) |
| 19. Colitis | (n=5) |
| 20. Appendectomy | (n=5) |
| 21. Hemorrhoidectomy | (n=5) |
| 22. Osteoarthritis, cervical | (n=4) |
| 23. Prostatitis | (n=4) |
| 24. Hearing loss | (n=4) |
| 25. Transient ischemic attack | (n=4) |
| 26. Stroke | (n=4) |
| 27. Ruptured intervertebral disc | (n=3) |
| 28. Osteoarthritis, diffuse | (n=3) |
| 29. Depression | (n=3) |
| 30. Nose or facial fracture | (n=3) |
| 31. Scalp laceration | (n=3) |
| 32. Epistaxis | (n=2) |
| 33. Infectious mononucleosis | (n=2) |
| 34. Fractured leg | (n=2) |
| 35. Gout | (n=2) |
| 36. Tuberculosis exposure | (n=2) |
| 37. Knee surgery | (n=2) |
| 38. Hiatal hernia | (n=2) |
| 39. Obesity | (n=2) |
| 40. Strabismus | (n=2) |
| 41. Ankle fracture | (n=2) |
| 42. Pericarditis | (n=2) |
| 43. Hematuria | (n=2) |
| 44. Constipation | (n=2) |
| 45. Skull fracture | (n=2) |
| 46. Pneumothorax | (n=2) |
| 47. Inguinal hernia | (n=2) |

Table 14 (cont)

| | |
|---|-------|
| 48. Lower limb anomaly | (n=1) |
| 49. Fracture of femur | (n=1) |
| 50. Senile tremor | (n=1) |
| 51. Multiple fractures | (n=1) |
| 52. Meniere's disease | (n=1) |
| 53. Excision of kidney stone | (n=1) |
| 54. Cirrhosis of liver, unexplained | (n=1) |
| 55. Hyperlipoproteinemia | (n=1) |
| 56. Syncope | (n=1) |
| 57. Heartblock | (n=1) |
| 58. Oligospermia | (n=1) |
| 59. Iron deficiency anemia | (n=1) |
| 60. Excision of tumor from appendix | (n=1) |
| 61. Adjustment reaction of adult life | (n=1) |
| 62. Hypertriglyceridemia | (n=1) |
| 63. Osteomyelitis, chronic | (n=1) |
| 64. Philippine hemorrhagic fever | (n=1) |
| 65. Colonic neoplasm | (n=1) |
| 66. Retinopathy | (n=1) |
| 67. Rheumatic heart disease | (n=1) |
| 68. Mumps, adult onset | (n=1) |
| 69. Myositis | (n=1) |
| 70. Hematocele | (n=1) |
| 71. Hepatitis, non-infective | (n=1) |
| 72. Fracture of cervical spine | (n=1) |
| 73. Exploratory laparotomy with excision of accessory spleen | (n=1) |
| 74. Diabetes mellitus | (n=1) |
| 75. Urethritis, non-specific | (n=1) |
| 76. Impotence, psychogenic | (n=1) |
| 77. Hives | (n=1) |
| 78. Seborrhea | (n=1) |
| 79. Fracture, unspecified | (n=1) |
| 80. Cholecystectomy | (n=1) |
| 81. Scleroderma | (n=1) |
| 82. Condyloma accuminata | (n=1) |
| 83. Phobic neurosis | (n=1) |
| 84. Migraine | (n=1) |
| 85. Rectal neoplasm, benign | (n=1) |
| 86. Late syphilis | (n=1) |
| 87. Benign neoplasm of mouth | (n=1) |
| 88. Shrapnel wound | (n=1) |
| 89. Cholelithiasis | (n=1) |
| 90. Arthralgia | (n=1) |
| 91. Rhinoplasty | (n=1) |
| 92. Leukoplakia | (n=1) |

Table 14 (cont)

| | | |
|------|---------------------------------------|-------|
| 93. | Multiple sclerosis | (n=1) |
| 94. | Injury to knee, non-specific | (n=1) |
| 95. | Pilonidal cyst | (n=1) |
| 96. | Traumatic arthritis | (n=1) |
| 97. | Drainage of perirectal abscess | (n=1) |
| 98. | Varicose veins | (n=1) |
| 99. | Meralgia paresthetica | (n=1) |
| 100. | Benign prostatic hypertrophy | (n=1) |
| 101. | Vertigo | (n=1) |
| 102. | Spinal anomaly, congenital | (n=1) |
| 103. | Prostatectomy | (n=1) |
| 104. | Tinnitus | (n=1) |
| 105. | Hepatitis, suspected | (n=1) |
| 106. | Nephrectomy | (n=1) |
| 107. | Pneumonia, non-specific | (n=1) |
| 108. | Wound, ear | (n=1) |
| 109. | Diverticulitis | (n=1) |
| 110. | Explosive personality | (n=1) |
| 111. | Injury to nerve of forearm | (n=1) |
| 112. | Dermatofibroma | (n=1) |
| 113. | Late effect of skull fracture | (n=1) |
| 114. | Transfusion hepatitis | (n=1) |
| 115. | Varicose veins with stasis dermatitis | (n=1) |
| 116. | Memory loss | (n=1) |
| 117. | Amebiasis | (n=1) |
| 118. | Salmonellosis | (n=2) |
| 119. | Nasal polyp | (n=1) |
| 120. | Eye surgery | (n=1) |
| 121. | Trichinosis | (n=1) |
| 122. | Viral meningitis | (n=1) |

*Total n=220

TABLE 15. Diagnosis in Order of Frequency for Subjects Responding by Medical History Questionnaire (n=100)

| | |
|---|--------|
| 1. Arthritis | (n=32) |
| 2. Hemorrhoids | (n=29) |
| 3. Hypertension | (n=20) |
| 4. Blurred vision | (n=17) |
| 5. Anxiety | (n=16) |
| 6. Hearing loss | (n=15) |
| 7. Chest pain | (n=14) |
| 8. Vertigo | (n=14) |
| 9. Rash or hives | (n=14) |
| 10. Heartburn | (n=13) |
| 11. Hay fever | (n=13) |
| 12. Bronchitis | (n=13) |
| 13. Heart disease | (n=12) |
| 14. Headache, tension | (n=10) |
| 15. Pneumonia | (n=10) |
| 16. Hernia, inguinal | (n=7) |
| 17. Tinnitus (ringing in ears) | (n=6) |
| 18. Malaria | (n=6) |
| 19. Peptic ulcer | (n=5) |
| 20. Gonorrhea | (n=4) |
| 21. Dysuria | (n=4) |
| 22. Acute rhinitis | (n=4) |
| 23. Nosebleeds | (n=4) |
| 24. Low back pain | (n=4) |
| 25. Hepatitis | (n=3) |
| 26. Muscle cramps | (n=3) |
| 27. Appendectomy | (n=3) |
| 28. Infectious mononucleosis | (n=3) |
| 29. Motion sickness | (n=3) |
| 30. Conjunctivitis | (n=3) |
| 31. Ruptured intervertebral disc, non-specified | (n=2) |
| 32. Tuberculosis exposure | (n=2) |
| 33. Depression | (n=2) |
| 34. Alcoholism | (n=2) |
| 35. Diabetes mellitus | (n=2) |
| 36. Double vision | (n=2) |
| 37. Gout | (n=2) |
| 38. Benign neoplasm of small intestine | (n=2) |
| 39. Psoriasis | (n=2) |
| 40. Rheumatoid arthritis | (n=2) |
| 41. Allergic dermatitis | (n=2) |
| 42. Diverticulitis of colon | (n=2) |
| 43. Kidney stone | (n=2) |
| 44. Cardiac arrhythmia | (n=1) |

Table 15 (cont)

| | |
|---|-------|
| 45. Unspecified mycosis | (n=1) |
| 46. Fractured jaw | (n=1) |
| 47. Glaucoma | (n=1) |
| 48. Dupuytren's contracture | (n=1) |
| 49. Angina pectoris | (n=1) |
| 50. Myositis | (n=1) |
| 51. Melena | (n=1) |
| 52. Urinary tract infection | (n=1) |
| 53. Mitral valve stenosis | (n=1) |
| 54. Congestive heart failure | (n=1) |
| 55. Spontaneous pneumothorax | (n=1) |
| 56. Arteriosclerotic heart disease with hypertension | (n=1) |
| 57. Emphysema | (n=1) |
| 58. Phobic neurosis | (n=1) |
| 59. Knee surgery | (n=1) |
| 60. Memory loss | (n=1) |
| 61. Arteriosclerotic heart disease without hypertension | (n=1) |
| 62. Hyperventilation | (n=1) |
| 63. Shingles | (n=1) |
| 64. Myalgia | (n=1) |
| 65. Cholecystitis | (n=1) |
| 66. Rheumatic heart disease | (n=1) |
| 67. Amoebiasis | (n=1) |
| 68. Tonsillectomy | (n=1) |
| 69. Tremor | (n=1) |
| 70. Migraine | (n=1) |
| 71. Ruptured intervertebral disc, lumbar | (n=1) |
| 72. Colitis | (n=1) |
| 73. Generalized arteriosclerosis | (n=1) |
| 74. Osteoarthritis of spine | (n=1) |
| 75. Fracture facial bones | (n=1) |
| 76. Labyrinthitis | (n=1) |
| 77. Hematuria | (n=1) |
| 78. Ketonuria | (n=1) |
| 79. Rheumatic fever | (n=1) |
| 80. Tonsillitis | (n=1) |
| 81. Paresthesia | (n=1) |
| 82. Convulsion | (n=1) |

TABLE 16. Frequency of 85 Chronic Conditions in the United States, 1968-73
(DHEW Publication No. (HRA) 77-1536 Series 10-No. 109)

| <u>Diagnosis</u> | <u>Number per 1,000 persons</u> |
|--|-------------------------------------|
| 1. Chronic sinusitis | 103.0 |
| 2. Arthritis, N.E.C. | 92.9 |
| 3. Hearing impairments | 71.6 |
| 4. Hypertensive disease, N.E.C. | 60.1 |
| 5. Hay fever, without asthma (includes upper respiratory allergy) | 54.2 |
| 6. Heart conditions | 50.4 |
| 7. Hemorrhoids | 47.7 |
| 8. Visual impairments | 47.4 |
| 9. Corns and callosities | 41.5 |
| 10. Impairments (except paralysis) of back or spine | 39.6 |
| 11. Varicose veins, N.E.C. | 36.8 |
| 12. Impairments (except paralysis or absence) of lower extremities and hip | 36.5 |
| 13. Chronic bronchitis | 32.7 |
| 14. Eczema, dermatitis, and urticaria, N.E.C. | 30.2 |
| 15. Asthma, with or without hay fever | 30.2 |
| 16. Frequent constipation | 23.8 |
| 17. Diseases of nail | 22.9 |
| 18. Hypertrophy of tonsils and adenoids | 21.8 |
| 19. Migraine | 21.8 |
| 20. Diabetes mellitus | 20.4 |
| 21. Diseases of sebaceous glands, N.E.C. (acne) | 19.7 |
| 22. Ulcer of stomach and duodenum | 17.2 |
| 23. Synovitis, bursitis, and tenosynovitis | 16.5 |
| 24. Hernia of abdominal cavity | 16.3 |
| 25. Diseases of the urinary system, N.E.C. | 13.2 |
| 26. Functional and symptomatic upper gastrointestinal disorders | 13.1 |
| 27. Bunion | 12.3 |
| 28. Impairments (except paralysis and absence) of upper extremities and shoulders | 12.1 |
| 29. Gallbladder condition | 10.3 |
| 30. Anemia unspecified | 10.2 |
| 31. Speech defects | 9.6 |
| 32. Chronic enteritis and ulcerative colitis | 9.3 |
| 33. Hypertrophic and atrophic conditions of skin other than 9 | 8.8 |
| 34. Gastritis and duodenitis | 8.6 |
| 35. Displacement of intervertebral disc | 8.6 |
| 36. Specified diseases of thyroid gland other than 70 | 8.3 |

Table 16 (cont)

| | | |
|-----|--|-----|
| 37. | Neuralgia, neuritis, N.O.S., N.E.C. | 8.2 |
| 38. | Cerebrovascular disease | 7.5 |
| 39. | Inflammatory conditions of skin and subcutaneous tissue other than 14 and 43 | 7.2 |
| 40. | Paralysis, complete or partial | 6.9 |
| 41. | Disease of uterus and ovary, N.E.C. | 6.8 |
| 42. | Emphysema | 6.6 |
| 43. | Psoriasis and similar disorders | 6.5 |
| 44. | Diseases of kidney and ureter, N.E.C. other than 63 and 80 | 6.5 |
| 45. | Diseases of prostate | 6.3 |
| 46. | Specified female genital disorders other than 41 | 6.3 |
| 47. | Rheumatism, nonarticular and unspecified | 6.1 |
| 48. | Chronic laryngitis | 5.7 |
| 49. | Diseases of skin and subcutaneous tissue, N.E.C. | 5.4 |
| 50. | Impairments (except paralysis or absence) multiple N.E.C. and ill-defined of limbs, back and trunk | 5.1 |
| 51. | Gout | 4.8 |
| 52. | Poor circulation N.O.S. | 4.6 |
| 53. | Diseases of bone | 4.5 |
| 54. | Congenital anomalies of circulatory system | 4.4 |
| 55. | Sciatica | 4.3 |
| 56. | Kidney trouble or disease N.O.S. | 4.3 |
| 57. | Absence of entire finger(s) or toe(s) only | 4.2 |
| 58. | Intestinal condition | 4.2 |
| 59. | Deflected nasal septum | 4.0 |
| 60. | Thyroid trouble, N.O.S. | 3.6 |
| 61. | Pleurisy | 3.4 |
| 62. | Arteriosclerosis, N.E.C. | 3.4 |
| 63. | Calculus of kidney and ureter | 3.3 |
| 64. | Iron deficiency anemia | 3.2 |
| 65. | Epilepsy, all types; chronic convulsions, cause unknown | 3.1 |
| 66. | Dermatophytosis, dermatomycoses | 2.7 |
| 67. | Nasal polyp | 2.7 |
| 68. | Stomach trouble N.O.S. | 2.7 |
| 69. | Chronic interstitial pneumonia | 2.0 |
| 70. | Goiter, all forms | 2.0 |
| 71. | Neuralgia, neuritis, specified sites and types, N.E.C. | 1.9 |
| 72. | Phlebitis and thrombophlebitis, N.E.C. | 1.6 |
| 73. | Chronic infections of skin and subcutaneous tissue, N.E.C. | 1.5 |
| 74. | Absence of major extremities | 1.4 |
| 75. | Liver condition | 1.4 |
| 76. | Female trouble, N.O.S. | 1.0 |

Table 16 (cont)

| | |
|---|-----|
| 77. Tuberculosis, active | 0.8 |
| 78. Tuberculosis, arrested or inactive | 0.7 |
| 79. Pernicious and other deficiency anemias | 0.7 |
| 80. Nephritis, N.E.C. | 0.7 |
| 81. Pneumoconiosis | 0.6 |
| 82. Bronchiectasis | 0.6 |
| 83. Multiple sclerosis | 0.4 |
| 84. Specified anemias other than 64 and 79 | 0.4 |
| 85. Cystic fibrosis | 0.2 |

Table 17. Yearly Incidence of Acute Conditions in the United States from July 1968 through June 1976 (Averaged)

| <u>Condition</u> | <u>Incidence per 1,000 persons per year</u> |
|-------------------------------------|---|
| Respiratory | 109.6 |
| Upper respiratory conditions | 59.8 |
| Influenza | 43.2 |
| Other | 5.4 |
| Injuries | 32.1 |
| Infectious and parasitic conditions | 23.4 |
| Digestive conditions | 10.3 |
| Other | 29.3 |

(SOURCE: DHEW Publication No. (PHS) 78-1548)

Table 18. Ambulatory Care Visits to Psychiatrists, 1975-76 (Source: Advance Data From Vital and Health Statistics, No. 38, DHEW 1978)

| <u>Diagnosis in Order of Frequency</u> | <u>Number of Visits (in millions)</u> | <u>% of Visits</u> |
|--|---|--------------------|
| Neuroses | 12.8 | 41.9 |
| Personality disorders | 4.2 | 13.5 |
| Schizophrenia | 3.4 | 11.3 |
| Transient and situational disturbances | 2.2 | 7.2 |
| Affective psychoses | 1.4 | 4.5 |
| Nervousness and debility (depression) | 1.1 | 3.6 |
| Medical or special examination | 0.6 | 1.9 |

Table 19. Ambulatory Care Visits to All Specialists, 1975-76 (Source: Advance Data from Vital and Health Statistics, No. 38, DHEW 1978)

| <u>Diagnosis in Order of Frequency</u> | <u>Number of Visits (in millions)</u> | <u>% of Visits</u> |
|--|---|--------------------|
| Neuroses | 25.7 | 63.6 |
| Nervousness and debility (depression) | 6.1 | 15.1 |
| Schizophrenia | 3.8 | 9.4 |
| Transient and situational disturbances | 2.9 | 7.1 |
| Affective psychoses | 1.9 | 4.7 |

Table 20. Previous Unrecognized, Poorly Characterized or Misdiagnosed Conditions Uncovered During LSD Follow-up in 220 Subjects

| | |
|---------------------------------|-------|
| 1. Nasal septal defect | (n=9) |
| 2. Hyperlipoproteinemia | (n=9) |
| 3. Hypertension | (n=7) |
| 4. Hearing loss | (n=6) |
| 5. Benign prostatic hypertrophy | (n=5) |
| 6. Depression | (n=4) |
| 7. Essential tremor | (n=3) |
| 8. "Chemical" diabetes | (n=2) |
| 9. Emphysema | (n=2) |
| 10. Liver dysfunction | (n=2) |
| 11. Glaucoma | (n=2) |
| 12. Obesity | (n=2) |
| 13. Tinea pedis | (n=2) |
| 14. Bronchitis | (n=2) |
| 15. Condyloma accuminata | (n=1) |
| 16. Phthirus infestation | (n=1) |
| 17. Tinea cruris | (n=1) |
| 18. Trichomoniasis | (n=1) |
| 19. Manic depressive illness | (n=1) |
| 20. Benign neoplasm of palate | (n=1) |
| 21. Eosinophilia | (n=1) |
| 22. Lipoma | (n=1) |
| 23. Nasopharyngeal carcinoma | (n=1) |
| 24. Benign neoplasm of skin | (n=1) |
| 25. Anemia | (n=1) |
| 26. Dermatofibroma | (n=1) |
| 27. Anxiety neurosis | (n=1) |
| 28. Alzheimer's disease | (n=1) |
| 29. Migraine | (n=1) |
| 30. Retinal-vitreous adhesion | (n=1) |
| 31. Conjunctivitis | (n=1) |
| 32. Mucositis | (n=1) |
| 33. Hysterical neurosis | (n=1) |
| 34. Senile cataracts | (n=1) |
| 35. Nasal polyp | (n=1) |
| 36. Hypochondriacal neurosis | (n=1) |
| 37. Cardiac arrhythmia | (n=1) |
| 38. Heart block | (n=1) |
| 39. Transient ischemic attack | (n=1) |
| 40. Sialoadenitis | (n=1) |
| 41. Hiatal hernia | (n=1) |
| 42. Inguinal hernia | (n=1) |
| 43. Urethritis | (n=1) |

Table 20 (cont)

| | | |
|-----|-----------------|-------|
| 44. | Gynecomastia | (n=1) |
| 45. | Hematuria | (n=1) |
| 46. | Syncope | (n=1) |
| 47. | Keratoderma | (n=1) |
| 48. | Bacteriuria | (n=1) |
| 49. | Chorioretinitis | (n=1) |

Table 21. Electroencephalographic Abnormalities (213 reports)

1. Diffuse, sharp theta activity with left-sided predilection (case 123)
2. Frontal slowing, left-sides (case 186)*
3. Generalized slowing (case 250)*
4. Slowing, left frontotemporal and right temporo-parietal (case 286)*
5. Non-specific sharp activity (case 330)**
6. Occasional, isolated spike activity (case 414)
7. Multifocal spikes and sharp activity (case 633)
8. Diffuse, intermittent sharp theta activity (case 706)

*Specific central nervous system lesion known

**Specific central nervous system lesion suspected

Table 22. Results of Chromosome Analysis in 26 Cases

| | |
|-----------------|----------|
| Normal | 18 |
| Abnormal | 5 |
| Results pending | 3 |
| | <hr/> 26 |

Reported Abnormalities

1. Increased break and gap rate
2. Extra D group
3. Extra C group (n=2)
4. Extra A group

Table 23. Results of Chromosome Analysis versus LSD or Other CW Agent Exposure

| | <u>Normal</u> | <u>Abnormal</u> | <u>Pending</u> |
|--------------------|---------------|-----------------|----------------|
| No drug | 1 | 0 | 0 |
| LSD only | 14 | 5 | 0 |
| Other CWA only | 0 | 0 | 0 |
| LSD plus other CWA | 3 | 0 | 3 |
| Unknown | <u>0</u> | <u>0</u> | <u>0</u> |
| Total | 18 | 5 | 3 |

Table 24. Reported Abnormalities in Children of LSD Subjects

I. Children born prior to paternal LSD exposure (n=155)

A. Major defects (2.6%)

1. Congenital dislocation of the hip; pigmented nevus
2. Congenital dislocation of the hip; club foot
3. Congenital heart disease (tetralogy of Fallot)
4. Down's syndrome

B. Minor defects

None

C. Possible defects (0.6%)*

1. Schizophrenia

D. Familial abnormalities

None

II. Children born subsequent to paternal LSD exposure (n=201)

A. Major defects (3.9%)

1. Congenital heart disease; craniosynostosis
2. Congenital heart disease (atrioseptal defect)
3. Congenital heart disease (type unknown)
4. Congenital heart disease (type unknown)
5. Ovarian cysts
6. Congenital dislocation of the hip
7. Hemiatrophy
8. Cleft palate

B. Minor defects (0.5%)

1. Crooked 5th digit; possible hyperactivity

C. Possible defects (3.0%)*

1. Dyslexia, mild
2. Febrile seizures
3. School phobia; ulcers
4. Brain damage, traumatic (?)
5. Grand mal seizures
6. Unspecified abnormality

Table 24 (cont)

D. Familial abnormalities (1.4%)

1. "Pigeon feet"**
2. "Pigeon feet"***
3. Petit mal seizures

*Not generally recognized as congenital abnormalities

**These children are siblings

Table 25. Chi Square Values for Comparisons of Major Congenital Abnormalities

- A. Overall group of children of LSD subjects vs. general population
 $\chi^2=0.93, p>0.250$
- B. Children born prior to paternal LSD exposure vs. general population
 $\chi^2=0.82, p>0.250$
- C. Children born after paternal LSD exposure vs. general population
 $\chi^2=0.68, p>0.250$
- D. Children born after paternal LSD exposure vs. children born prior to paternal LSD exposure
 $\chi^2=1.85, p>0.250$
- E. Frequency of CHD* in children of LSD study group vs. general population
 $\chi^2=0.55, p>0.250$
- F. Frequency of CHD in children born prior to paternal LSD exposure vs. general population
 $\chi^2=0.23, p>0.250$
- G. Frequency of CHD in children born after paternal LSD exposure vs. general population
 $\chi^2=2.02, 0.100>p>0.250$
- H. Frequency of CHD in children born before paternal LSD exposure vs. children born after parental LSD exposure
 $\chi^2=5.64 p<0.025$

*CHD: Congenital heart disease.

Table 26. Preliminary Results of Halstead-Reitan Neuropsychological Battery (corrected by elimination of control subjects)

A. Project 50/50

| <u>Rating</u> | <u>Number</u> | <u>Percentage</u> |
|--|---------------|-------------------|
| Normal | 34 | 49 |
| Mild impairment - no known reason | 29 | 42 |
| Mild impairment - probable etiology identified | 4 | 6 |
| Abnormal - no known reason | 0 | 0 |
| Abnormal - probable etiology identified | 2 | 3 |
| | <u>69</u> | <u>100</u> |

B. Main Follow-up

| <u>Rating</u> | <u>Number</u> | <u>Percentage</u> |
|--|---------------|-------------------|
| Normal | 61 | 59 |
| Mild impairment - no known reason | 26 | 25 |
| Mild impairment - probable etiology identified | 12 | 12 |
| Abnormal - no known reason | 1 | 1 |
| Abnormal - probable etiology identified | 3 | 3 |
| | <u>103</u> | <u>100</u> |

C. Combined Results

| <u>Rating</u> | <u>Number</u> | <u>Percentage</u> |
|--|---------------|-------------------|
| Normal | 95 | 55 |
| Mild impairment - no known reason | 55 | 32 |
| Mild impairment - probable etiology identified | 16 | 9 |
| Abnormal - no known reason | 1 | 0.6 |
| Abnormal - probable etiology identified | 5 | 3 |
| | <u>172</u> | <u>99.6</u> |

D. Combined Results Corrected by Identification of Possible Etiologies

| <u>Rating</u> | <u>Number</u> | <u>Percentage</u> |
|--|---------------|-------------------|
| Normal | 95 | 55 |
| Mild impairment - no known reason | 21 | 12 |
| Mild impairment - probable etiology identified | 50 | 29 |
| Abnormal - no known reason | 0 | 0 |
| Abnormal - probable etiology identified | 6 | 4 |
| | <u>172</u> | <u>100</u> |

Table 27. Motivation for Participation in In-Patient Portion of LSD Study (n=133)

| | | |
|---|----|-------|
| Desire for complete medical examination | 72 | (54%) |
| Concern about specific health problems | 9 | (7%) |
| Concern about LSD effects | 69 | (52%) |
| Desire to assist Army efforts | 39 | (29%) |
| Other | 16 | (12%) |

Table 28. Stated Reason for Declining Participation in In-Patient Portion of LSD Study (n=96)

| | | |
|----------------------------------|----|-------|
| Lack of concern over LSD effects | 35 | (36%) |
| Lack of time | 54 | (56%) |
| Loss of income | 10 | (10%) |
| Distrust of Army motives | 8 | (8%) |
| Other | 19 | (20%) |

Table 29. Number of Doses of LSD Given to Subjects Reporting Adverse Effects

| <u>Number of Doses</u> | <u>Number of Subjects</u> |
|----------------------------|-------------------------------|
| 0 | 8 |
| 1 | 47 |
| 2 | 9 |
| 3 | 4 |
| 4 | 1 |
| Unknown | 7 |
| Total | <u>76</u> |

Table 30. Percentage of Subjects Receiving LSD by Number of Doses Versus Percentage of Adverse Effects Reported by Number of Doses

| <u>Number of Dose(s)</u> | <u>Percentage of Total</u> | <u>Percentage Reporting Adverse Effects</u> |
|------------------------------|--------------------------------|---|
| 0 | 12 | 11 |
| 1 | 55 | 62 |
| 2 | 13 | 12 |
| 3 | 4 | 5 |
| 4 | 0.3 | 1 |
| 5 | 0.6 | 0 |
| Unknown | 15 | 9 |

Table 31. Subjects Reporting Adverse Effects, LSD versus Other CW Agent Administration

| | |
|--------------------|----|
| LSD only | 38 |
| LSD plus other CWA | 30 |
| Other CWA only | 1 |
| Unknown | 7 |

Table 32. Subjects Reporting Adverse Effects, Subsequent Exposures to Non-hallucinogenic Illicit Drugs, Alcohol, Toxins

| | <u>Illicit Drugs</u> | <u>Alcohol</u> | <u>Toxins</u> |
|-------------|--------------------------|----------------|---------------|
| Exposed | 13 | 15 | 15 |
| Not Exposed | 62 | 59 | 60 |
| Unknown | <u>1</u> | <u>2</u> | <u>1</u> |
| | 76 | 76 | 76 |

Table 33. Comparison of Age Distribution between Total Group of LSD Follow-up Subjects and Subjects Reporting Adverse Effects

A. Age Distribution of Total Population Evaluated*

| Freq | 10 | 22 | 30 | 50 | 54 | 38 | 44 | 22 | 21 | 9 | 11 | 3 |
|------|----|----|----|----|----|----|----|----|----|----|----|----|
| Age | 30 | 33 | 36 | 39 | 42 | 45 | 48 | 51 | 54 | 57 | 60 | 63 |

B. Age Distribution for Subjects Reporting Adverse Effects**

| Age | 30 | 33 | 36 | 39 | 42 | 45 | 48 | 51 | 54 | 57 | 60 | 63 |
|------|----|----|----|----|----|----|----|----|----|----|----|----|
| Freq | 2 | 6 | 10 | 12 | 17 | 4 | 12 | 4 | 4 | 3 | 2 | |

 $\chi=3$

****x=1**

Table 34. Comparison of Rank at Time of LSD Experimentation with Subsequent Adverse Reactions

| | <u>No Adverse Effects</u> | <u>Adverse Effects</u> | <u>Total</u> |
|----------|---------------------------|------------------------|--------------|
| Officer | 94 (85%) | 16 (15%) | 110 |
| Enlisted | 136 (72%) | 54 (28%) | 190 |
| Unknown | <u>14 (70%)</u> | <u>6 (30%)</u> | <u>20</u> |
| Total | 244 (76%) | 76 (24%) | 320 |

Table 35. Site of Chemical Warfare Experiments and Year of Participation for Subjects Reporting Adverse Effects

| | <u>Edgewood Arsenal</u> | <u>Fort McClellan</u> | <u>Fort Benning</u> | <u>Fort Bragg</u> | <u>Total</u> |
|-------|-------------------------|-----------------------|---------------------|-------------------|--------------|
| 1955 | 1 | 0 | 0 | 0 | 1 |
| 1956 | 2 | 0 | 0 | 0 | 2 |
| 1957 | 8 | 0 | 0 | 0 | 8 |
| 1958 | 15 | 0 | 0 | 14 | 29 |
| 1959 | 0 | 8 | 0 | 0 | 8 |
| 1960 | 3 | 0 | 2 | 0 | 5 |
| 1961 | 1 | 0 | 0 | 0 | 1 |
| 1962 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 6 | 0 | 0 | 0 | 6 |
| 1964 | 5 | 0 | 0 | 0 | 5 |
| 1965 | 2 | 0 | 0 | 0 | 2 |
| 1966 | 5 | 0 | 0 | 0 | 5 |
| 1967 | <u>4</u> | <u>0</u> | <u>0</u> | <u>0</u> | <u>4</u> |
| Total | 52 | 8 | 2 | 14 | 76 |

Table 36. Site of Chemical Warfare Experiments Comparing Percentages of Total Subjects Examined to Percentages of Subjects with Adverse Effects

| | <u>Total Number of Subjects</u> | <u>% of Total</u> | <u>Number of Subjects Reporting Adverse Effects</u> | <u>Percentage of Total Subjects Reporting Adverse Effects</u> |
|------------------|-------------------------------------|-----------------------|---|---|
| Edgewood Arsenal | 180 | 56 | 52 | 68 |
| Ft McClellan | 68 | 21 | 8 | 11 |
| Ft Benning | 28 | 9 | 2 | 3 |
| Ft Bragg | 40 | 13 | 14 | 18 |
| Other | 4 | 1 | 0 | 0 |
| | <u>320</u> | <u>100</u> | <u>76</u> | <u>100</u> |

Table 37. Exposures to Other Chemical Warfare Agents in 31 or 76
(41%) LSD Subjects Reporting Adverse Effects

| | |
|-----------------------------|--------|
| Glycolates | |
| EA 3443 | (n=4) |
| BZ | (n=2) |
| Scopolamine | (n=6) |
| CS 27349 | (n=1) |
| Anticholinesterase | |
| VX | (n=4) |
| Atropine | (n=5) |
| PAM | (n=3) |
| Riot control | |
| T792 | (n=1) |
| DM | (n=1) |
| CS | (n=4) |
| Miscellaneous incapacitants | |
| EA 2233 | (n=3) |
| EA 1476 | (n=1) |
| ALD | (n=1) |
| 302089 | (n=1) |
| Miscellaneous | |
| SHTP | (n=1) |
| Propylene glycol | (n=1) |
| Unknown | (n=8) |
| Other | (n=12) |

Table 38. Toxic Exposures in 16 of 76 (21%) Subjects Reporting Adverse Effects

| | n | Case No. |
|----------------------|-------|---------------------------|
| Radiation | (n=5) | (329, 377, 478, 582, 627) |
| Pesticides | (n=3) | (128, 478, 650) |
| Mercury | (n=2) | (478, 680) |
| Carbon tetrachloride | (n=2) | (478, 627) |
| Trichlor solvents | (n=2) | (478, 627) |
| Plastics | (n=2) | (478, 627) |
| Microwave radiation | (n=2) | (478, 596) |
| Photochemicals | (n=1) | (26) |
| Chlorine gas | (n=1) | (28) |
| Anhydrous ammonia | (n=1) | (140) |
| Liquid nitrogen | (n=1) | (140) |
| Paint products | (n=1) | (184) |
| Gas fumes | (n=1) | (329) |
| Smoke inhalation | (n=1) | (428) |
| Asbestos | (n=1) | (596) |
| Foundry dust | (n=1) | (627) |
| Dust | (n=1) | (649) |

Table 39. Exposures to Toxins in Subjects Reporting Adverse Effects
from LSD Exposure (arranged by case number)

| | |
|-----|---|
| 26 | Photographic chemicals |
| 28 | Chlorine gas |
| 128 | Pesticide |
| 140 | Anhydrous ammonia, liquid nitrogen |
| 184 | Paint products |
| 329 | Nuclear radiation, gasoline fumes |
| 377 | Nuclear radiation |
| 428 | Smoke inhalation |
| 478 | Benzene, carbon tetrachloride, epoxy, fiberglass, mercury, microwave radiation, nuclear radiation, pesticides, plastics, solvents, trichlor |
| 555 | Diesel exhaust fumes |
| 582 | Radiation |
| 596 | Asbestos, microwave radiation |
| 627 | Foundry dust, carbon tetrachloride, nuclear radiation, plastics, trichlor solvents |
| 649 | Dust |
| 650 | Pesticides |
| 680 | Mercury |

Table 40. Adverse Effects of LSD as Reported by Follow-up Subjects

A. Probable LSD Effects

Criteria: 1 - Occurrence within 2 years of exposure to LSD and

2 - Symptoms similar to known LSD effects or could conceivably have resulted from LSD

| Case Number | LSD | Other CW Agent | Symptom |
|-------------|-----|----------------|---|
| 1. 26 | + | 0 | Nightmares |
| 2. 34 | + | 0 | Nightmares; headache; tinnitus; paresthesias |
| 3. 38 | + | + | Flashbacks |
| 4. 44 | + | + | Flashbacks |
| 5. 47 | + | 0 | *Depression |
| 6. 85 | + | 0 | *Fatigue; depression |
| 7. 98 | + | 0 | Flashbacks |
| 8. 102 | + | + | *Dissociative episodes; acute confusional state |
| 9. 128 | + | 0 | Depression; paranoia; anxiety |
| 10. 142 | + | + | *Anxiety |
| 11. 202 | + | + | *Flashbacks; depression with suicidal ideation; personality change |
| 12. 211 | + | 0 | Flashback |
| 13. 222 | + | 0 | Depression with suicide gesture; dissociative episode |
| 14. 223 | + | 0 | *Alcohol abuse |
| 15. 224 | + | 0 | Flashbacks |
| 16. 244 | + | + | Depression |
| 17. 255 | + | 0 | Flashback |
| 18. 256 | + | 0 | *Personality change |
| 19. 257 | + | + | *Flashbacks; depression |
| 20. 270 | + | 0 | Fatigue |
| 21. 286 | + | 0 | *Flashbacks |
| 22. 288 | + | 0 | Anxiety |
| 23. 298 | + | 0 | Flashbacks |
| 24. 320 | + | 0 | Episodic withdrawal; paranoia |
| 25. 329 | + | + | *Flashbacks |
| 26. 337 | + | + | Flashbacks |
| 27. 347 | + | + | *Phobia; dissociative episodes with alcohol; alcohol abuse; "fizzing" in head |
| 28. 349 | + | 0 | *Seizure disorder |
| 29. 355 | + | + | Depression with suicide attempt |
| 30. 358 | + | 0 | Flashback |
| 31. 376 | + | 0 | *Dissociative episodes with alcohol; personality change |

*Subject reports symptoms persisting until present.

Table 40 (cont)

| <u>Case Number</u> | <u>LSD</u> | <u>Other CW Agent</u> | <u>Symptom</u> |
|--------------------|------------|-----------------------|---|
| 32. 377 | + | 0 | Nightmares |
| 33. 405 | + | + | *Depersonalization episodes; flashbacks |
| 34. 408 | + | + | Headache |
| 35. 432 | + | 0 | Flashbacks |
| 36. 458 | + | + | Flashbacks |
| 37. 478 | + | + | Depression; anxiety |
| 38. 481 | + | 0 | *Polydrug abuse |
| 39. 491 | + | 0 | Fatigue; flashbacks |
| 40. 544 | + | + | Flashbacks |
| 41. 546 | + | 0 | *Flashbacks |
| 42. 563 | + | 0 | Flashbacks |
| 43. 564 | + | + | Impotence (transient) |
| 44. 572 | + | 0 | Flashbacks |
| 45. 582 | + | 0 | Personality change |
| 46. 627 | + | 0 | *Dissociative episode; personality change |
| 47. 680 | + | + | *Headache; flashbacks |
| 48. 684 | + | 0 | Flashbacks |
| 49. 692 | + | 0 | Personality change |
| 50. 717 | + | 0 | *Flashbacks, confusion, nightmares, temper outbursts, paranoia, memory loss |

B. Possible LSD Effects

- Criteria: 1 - Occurrence within 2 years or (but not both)
 2 - Symptoms similar to known LSD effects or could conceivably be caused by LSD

| <u>Case Number</u> | <u>LSD</u> | <u>Other CW Agent</u> | <u>Symptom</u> |
|--------------------|------------|-----------------------|---|
| 51. 28 | + | 0 | *? Flashback - 10 years post-LSD |
| 52. 76 | + | + | Heroin addiction |
| 53. 139 | + | + | *"Bad memory," recent onset |
| 54. 141 | + | + | *Depression, onset 4 years post-LSD |
| 55. 149 | + | + | *"Headache, blurred vision, chest pain, moodiness, nightmares, bad cough, hard breathing with sinus congestion, lost memories, doesn't always hear" |
| 56. 173 | + | + | *Memory loss, recent onset |
| 57. 181 | + | + | *Depression, recent onset |
| 58. 321 | + | + | Depression, recent onset |
| 59. 442 | + | 0 | "Blackouts" while drinking |
| 60. 506 | + | 0 | *Episodes of "unconcern" |

*Subject reports symptoms persisting until present.

Table 40 (cont)

| <u>Case Number</u> | <u>LSD</u> | <u>Other CW Agent</u> | <u>Symptom</u> |
|--------------------|------------|-----------------------|---|
| 61. 703 | + | + | *"Problem with nervous system," muscle spasms since 1974 |
| 62. 723 | + | 0 | *Alcoholism |

C. Doubtful LSD Effects

Criteria 1 - Onset greater than 2 years from LSD exposure

2 - Neither known LSD effect nor likely to be caused by LSD

| <u>Case Number</u> | <u>LSD</u> | <u>Other CW Agent</u> | <u>Symptom</u> |
|--------------------|------------|-----------------------|------------------------------------|
| 63. 140 | + | + | *"Eyes dilate alot" |
| 64. 172 | + | + | *Vague weakness for past 4-5 years |
| 65. 184 | + | + | *Chronic shortness of breath |
| 66. 342 | + | 0 | *Stiff muscles; hot flashes |
| 67. 428 | + | + | *Photophobia |
| 68. 445 | + | + | *Allergies |

D. Effects Reported by Subjects Not Known to Have Received LSD Specifically

| <u>Case Number</u> | <u>LSD</u> | <u>Other CW Agent</u> | <u>Symptom</u> |
|--------------------|------------|-----------------------|---|
| 69. 101 | 0 | 0 | *Personality change; alcohol abuse |
| 70. 234 | 0 | 0 | *Nightmares; withdrawal |
| 71. 406 | 0 | 0 | Distortion of reality; acute paranoid state |
| 72. 487 | 0 | + | *Headaches |
| 73. 555 | 0 | 0 | *Nervousness and withdrawal |
| 74. 596 | 0 | 0 | *Saltshaker phobia; indecisiveness |
| 75. 599 | 0 | 0 | *Inner ear problems |
| 76. 649 | 0 | 0 | *Flashbacks; fear of death; fear of insanity; anxiety; chronic gastric distress |

*Subject reports symptoms persisting until present.

Table 41. Adverse Effects of LSD as Reported by 320 Study Subjects
(order of frequency)

| | |
|-----------------------|--------|
| Flashbacks | (n=27) |
| Somatic complaints | (n=18) |
| Depression | (n=12) |
| Personality change | (n= 7) |
| Anxiety | (n= 6) |
| Nightmares | (n= 5) |
| Dissociative episodes | (n= 5) |
| Alcohol abuse | (n= 4) |
| Paranoid ideation | (n= 4) |
| Memory loss | (n= 4) |
| Phobia | (n= 2) |
| Episodic withdrawal | (n= 2) |
| Drug abuse | (n= 2) |
| Seizure disorder | (n= 1) |
| Miscellaneous | (n= 1) |

Table 42. Characteristics of Reported Flashback Phenomena

| <u>Case Number</u> | <u>Onset Post-LSD</u> | <u>Symptoms/Course</u> |
|--------------------|-----------------------|---|
| 28 | 10 years | Two episodes of "good feelings" and blurred vision reminiscent of LSD exposure; no further symptoms since 1969 |
| 38 | 3 months | Three episodes of transient attention of consciousness preceded by a whistling sound; symptoms resolved within 6 months |
| 44 | within first year | Seven episodes of visual hallucinations from 1963 through present |
| 98 | 1 week | Two episodes of "being under the influence of LSD"; both episodes occurred within a few weeks of LSD. |
| 202 | within 2 years | Solitary visual hallucination |
| 211 | within first year | Occasional episodes of fatigue reminiscent of LSD experience; symptoms have persisted to present |
| 224 | within first year | Occasional episodes of depersonalization; persistent to present |
| 255 | 1 week | Solitary, brief recurrence of LSD experience |
| 257 | within first year | "Flashbacks" and depression; resolved within 1 year |
| 286 | 1 year | Visual hallucination lasting 15 minutes; one similar episode 10 years later (1969) |
| 298 | within first year | Recurrent feelings of depersonalization; persistent to present although less frequent |
| 329 | within first year | Recurrent "strobe-like" visual images persisting, though decreasing in frequency, to present |
| 337 | within 2 years | Solitary recurrence of "feelings" reminiscent of LSD; occurred while in Viet Nam |
| 358 | 3 weeks | Solitary episode of recurrence of LSD experience |
| 405 | 1 week | Recurrent feelings of isolation; panic and visual hallucinations; persistent to present |
| 432 | 1 week | Numerous "flashbacks"; resolved within first week post-LSD |
| 458 | within first year | Recurrent feelings of apprehension, anxiety, unreality and visual and auditory distortions; resolved within 4 years |

Table 42 (cont)

| <u>Case Number</u> | <u>Onset Post-LSD</u> | <u>Symptoms/Course</u> |
|--------------------|-----------------------|---|
| 491 | one week | Two episodes of excessive fatigue and dream-like dizzy spells, one while in Vietnam; only occasional episodes of lightheadedness since 1970 |
| 506 | within 3 years | Three or four episodes of feelings of "unconcern"; no symptoms since 1972 |
| 544 | within 1 year | Episodes of transient loss of concentration; persistent to present |
| 546 | first few weeks | Recurrent disorientation; resolved within a few weeks |
| 563 | 18 months | Solitary episode of <u>jamais vu</u> |
| 572 | within 2 years | Solitary episode of visual hallucinations |
| 649 | within first year | Recurrent visual hallucinations, fear of death, and fear of insanity; symptoms persistent to present |
| 680 | within first year | Recurrent episodes of transient confusion, nausea, headache and giddiness; persistent to present |
| 684 | within first year | Recurrent visual distortions; persistent - but rare - to present |
| 717 | 24 hours | Recurrent episodes of <u>jamais vu</u> , intermittent confusion, nightmares, loss of concentration, temper outbursts, paranoia; persistent to present |

CASE #26 * year old male who participated in LSD experiments in 1958. At the time of evaluation the subject stated that on "several" occasions following exposure to LSD he experienced unusually vivid nightmares and "weird" dreams involving "death-like" themes. The subject has experienced no further symptoms which he can relate to LSD exposure. At the present time he is employed as a _____ and _____ and comes in frequent contact with photographic chemicals. Past medical history was unremarkable with the exception of having been under medication for suspected tuberculosis. Physical and neurological examinations were completely within normal limits. Routine laboratory screening showed no significant abnormalities. Likewise no significant illnesses were discovered during routine consultations with the Psychiatry, Psychology, Ophthalmology and ENT Services.

CASE #28 _____ year old male who participated in LSD experimentation in 1958. During follow-up evaluation the patient stated that in 1968 he had two spontaneously occurring episodes during which he experienced feelings which were somewhat reminiscent of his LSD exposure 10 years previously. These feelings were described as "good feeling" and blurring of vision. Neither episode lasted for more than a few minutes and neither was triggered by any obvious environmental stimuli. Subsequent to these episodes the patient has had no further signs or symptoms which he can relate to LSD exposure. A few years following his exposure to LSD, the subject was also accidentally exposed to chlorine gas. This exposure led to 1 day of hospitalization and treatment with oxygen therapy. The subject states that he has experimented with marijuana but has not used any other illicit or hallucinogenic drugs. The subject is divorced and is living with two children, both of whom were born subsequent to his LSD exposure and both of whom are in good health. Past medical history revealed idiopathic hypercalcemia, "prostate problems," occasional rectal bleeding, and "head ticks." This last complaint was described as a noise heard by the patient and by others that sounded like an electric spark and occurred at a rate of about 60 per minute. The patient stated that this symptom occurred four times between the period 1960 and 1970 and on each occasion lasted about 1 minute before resolving spontaneously. Physical examination was completely unremarkable with the exception of mild obesity, a small internal hemorrhoid, and diminished vibratory sensation in the right toe. Routine laboratory screening confirmed the history of mild hypercalcemia and in addition showed a borderline elevation of serum triglycerides and serum alkaline phosphatase. All routine consultations were unremarkable with the exception of the finding of a mild neurosensory hearing loss in the right ear.

CASE #34 The subject is a _____ year old male who participated in LSD testing in 1957. The subject received LSD on three occasions each about a week apart. After each LSD exposure the subject experienced a persistent ringing or buzzing in his ears. In addition, after the last exposure he experienced feelings of numbness in the back of his head and occasional

* The potential personal identifiers of the participants have been deleted (Page 116 thru 149) to protect their rights under the provisions of the Privacy Act.

bitemporal throbbing headaches. About 1 month later the subject underwent extensive evaluation for persistent headache and tinnitus (buzzing in the ears). A mild hearing loss was discovered although, according to several private ENT consultants who were asked to evaluate the patient, the hearing loss appeared to be chronic in nature and unrelated to LSD exposure. It was noted that 2 years prior to the patient's receiving LSD he had been treated for a severe otitis media which had caused perforation of the right eardrum and purulent discharge. A few weeks later the subject returned to his normal duty station where he began to have vivid nightmares which were reminiscent of his LSD experience and "weird" sensations throughout his body. He was hospitalized briefly in another Army medical center but no specific abnormalities were uncovered. The nightmares and the peculiar bodily sensations gradually resolved and have not recurred. However, within the next several years the subject experienced more or less continuous ringing in his ears. Past medical history obtained at the time of follow-up was unremarkable with the exception of the above symptoms. Physical examination and screening laboratory studies were all within normal limits. Psychiatry, psychology, and ophthalmology consultations revealed no abnormalities. ENT consultation with audiography showed a severe high frequency neurosensory hearing loss.

CASE #38 year old male who participated in LSD experimentation in 1963. The subject reported that during the first 3 months following his LSD exposure he experienced three episodes of transient alteration of consciousness. Each of these episodes was preceded by the spontaneous occurrence of a high-pitched whistling sound following which the subject stopped any activity he was performing and became unresponsive to the environment. Each episode lasted about approximately 2 minutes and was not accompanied by any overt evidence of convulsive activity. No further episodes have occurred since 1963. The patient's past medical history included traumatic arthritis of the right knee, osteoarthritis of the cervical spine, occasional bleeding from hemorrhoids, and anteroseptal myocardial infarction. Physical examination revealed a moderately increased blood pressure, some pain and stiffness of the cervical spine, and a small hemorrhoid. Routine laboratory studies including electroencephalography were all within normal limits. Electrocardiography revealed evidence of an old anterior myocardial infarction. Further study with vector cardiography confirmed the old anterior myocardial infarction and revealed a left anterior hemiblock. Cardiology consultation was obtained but there was no recommendation for additional diagnostic studies or alteration in mode of treatment. However, it was suggested that the subject be referred to his regular private physician for treatment of probable mild hypertension. X-rays of the cervical spine and right knee revealed changes consistent with degenerative cervical osteoarthritis and traumatic osteodegenerative disease of the right knee. Orthopedic consultation was obtained but there was no recommendation for specific additional treatment at the present. Routine consultation with Psychiatry, Psychology, Ophthalmology, and ENT Services revealed no specific

abnormalities other than the high frequency neurosensory hearing loss in the right ear and a mild conductive hearing loss in the left ear.

CASE #44 year old male employed in a capacity. The subject received LSD in 1963. Approximately seven times in the past 15 years he has experienced visual "flashbacks" consisting of the spontaneous and unpredictable appearance of bright colors in his field of vision. This phenomenon lasts only a matter of seconds and is not associated with any other symptoms whatsoever. These visual experiences are said to be similar to the effects produced by LSD in 1963. The subject's past medical history included an episode of meningitis of unknown etiology at the age of 6 years and two surgical procedures on the muscles of his right eye to compensate for "lazy muscle." Physical examination and laboratory screening revealed no abnormalities. ENT consultation showed a mild high frequency neurosensory hearing loss in the right ear and ophthalmology consultation showed a slight esotropia secondary to the previously mentioned surgery. Psychiatric evaluation showed no evidence of any psychiatric dysfunction.

CASE #47 The subject is a year old male who participated in LSD experiments in 1967. The subject stated that following his LSD exposure he was depressed for an indefinite period of time. He also stated that over the intervening years he has had recurrent episodes of depression. These are said to occur every 3 to 4 months and to last for approximately 1 week. The subject stated that he was uncertain whether or not these depressive episodes were related to his prior LSD exposure. The examining psychiatrist felt that the depressive episodes could be more accurately characterized as "demoralization" resulting from stressful life circumstances and poor marital adjustment. Past medical history included chronic ocular motor imbalance since childhood, recurrent nose bleeds, recurrent heartburn, chronic constipation, possible colitis, and a borderline chemical diabetes. There was also a history of multiple fractures of the left upper extremity with residual joint pain and stiffness, chronic low back pain treated with a laminectomy and a discectomy, right inguinal herniorrhaphy, and a recurrent venereal wart on the penis. The subject also reported symptomatic hemorrhoids, chorioretinitis of the right eye, a well-healed herniorrhaphy scar, a pilonidal cyst, small external hemorrhoids, and a small venereal wart. Neurological examination showed evidence of chronic oculomotor imbalance consisting of bilateral esophoria, horizontal diplopia on lateral gaze in either direction, and bidirectional nystagmus. There was also evidence of chronic, minimal atrophy of the left calf secondary to the previously mentioned back surgery. All laboratory studies were within normal limits including electrocardiography and electroencephalography. Routine consultations with Psychiatry, Psychology, Ophthalmology and ENT Services showed no abnormalities with the exception of the previously mentioned chorioretinitis of the right eye and acute follicular conjunctivitis which was felt to be allergic in origin. General surgery consultation was obtained at the patient's request and the presence of a small pilonidal cyst was confirmed.

CASE #76 year old male employed as an This subject was found to be a chronic heroin addict who immediately prior to his participation in the LSD follow-up project had been incarcerated in a state penitentiary. The subject stated that he began to use heroin approximately 6 months after discharge from the Army in 1965 and has been addicted ever since. He also gave a history of experimentation with marijuana, barbiturates, amphetamines, cocaine, PCP, and alcohol. At the time of evaluation the patient stated that his experience with LSD while in the Army led to a desire to experiment with other drugs. With the exception of a history of multiple drug abuse and heroin addiction the subject's past medical history was unremarkable. Physical examination was within normal limits with the exception of extensive needle tracks on both arms. Screening laboratory studies were all within normal limits. ENT evaluation showed neural hearing loss in the left ear. Psychiatric evaluation showed drug addiction and an antisocial personality disorder. The Alcohol and Drug Rehabilitation Service further evaluated the subject and arranged for the subject to enter into a rehabilitation program at therapeutic facilities near his home.

CASE #85 The subject is a year old male who participated in LSD experimentation in 1958. The subject stated that for 2 weeks following his exposure to LSD he felt "dead tired," had severe pain in his legs, and "couldn't see or speak to anybody." He stated that he self-medicated these symptoms with a dose of Geritol which resulted "in total body pain." The subject stated that since the LSD experiments everything has "fallen apart" in his family life and with respect to his general health. He stated that he has a "memory problem" which first occurred following LSD experimentation in 1958 and which now continues as "absentmindedness." The subject also complained of recurrent periods of depression lasting for several days and stated that his exposure to LSD caused him to "lose interest in sexual relations." He stated that these symptoms became much worse in 1961 and 1962 following several unrelated surgeries. In 1962 he was referred to an Army psychiatrist and placed on antidepressant medications. Although the antidepressant medications apparently improved his stated symptoms of fear, insomnia, and depression, he did not renew the prescription following 3 months, and has not sought further psychiatric evaluation since that time. Past medical history revealed peptic ulcer disease in 1951, a kidney stone of unknown composition in 1968, and gonorrhea in 1967. The subject underwent surgical repair of bilateral hernias in 1942 with a repeat repair of one side in 1974. A rectal polyp was removed in 1961 and a right testicular cyst removed in 1962. The subject further stated that although he currently uses alcohol only in moderation, from 1964 through 1968 he drank up to 1 quart of hard liquor daily. He also stated that he believes he has decreased hearing in his left ear since 1963, secondary to LSD ingestion,

and that in June 1977 he was involved in an automobile accident and believes that "his neck is broken." Physical examination was unremarkable with the exception of small hemorrhoidal tags and a slightly enlarged prostate. Neurological examination was unremarkable. Screening laboratory evaluations were all within normal limits. Cervical spine films were obtained and showed minimal anterior osteophyte formation of the C-5 vertebrae. Ophthalmology consultation revealed no abnormalities. Audiology consultation revealed a severe high frequency neurosensory hearing loss in both ears. This hearing loss was felt to be typical of noise exposure and compatible with the subject's history of having served in the artillery throughout his military career. Because of the finding of an enlarged prostate, the subject was referred to the Urology Service for further evaluation and was found to have chronic prostatitis for which he was placed on antibiotic medications. Urology also felt that there was some atrophy of the left testicle secondary to herniorrhaphy surgery in 1942. Gastroenterology Service was consulted for the history of possible ulcer disease. It was recommended that because of the history of rectal polyps the subject have a proctoscopy and a barium enema to rule out the possibility of any underlying colonic malignancy. The subject stated that he did not wish further gastrointestinal evaluation at the present time and that "even if I had cancer, I wouldn't allow an operation." Psychology testing suggested a depressive reaction and a schizoid personality with some paranoid characteristics. Psychiatric evaluation was obtained and the examining psychiatrist felt that this subject showed signs of a passive dependent/passive aggressive personality disorder of a chronic, severe nature along with depressive neurosis. Examining psychiatrist also suggested that this subject's history was compatible with alcoholism and recommended that the subject seek psychiatric outpatient treatment for his multiple psychiatric complaints.

CASE #98 The subject is a year old male who participated in LSD experimentation in 1959. In the first week following LSD exposure the subject experienced "one or two flashbacks" which consisted of several seconds of a sensation of being back under the influence of LSD. Subsequent to that time he has had no further flashbacks and no other signs or symptoms referable to LSD exposure. Past medical history was unremarkable with exception of a severe laceration of his right arm secondary to a bomb explosion in 1949. Physical and neurological examinations were unremarkable with the exception of residual effects of the previously mentioned trauma (numbness of the right index and middle fingers). There were also small lesions on the dorsal surfaces of both hands which were determined by the Dermatology Service to be actinic keratoses. Routine laboratory studies were all within normal limits with the exception of a chest x-ray which showed scattered, calcified granulomata in the right lung consistent with old, inactive inflammatory disease. Ophthalmology, psychiatry, and psychology consultations were essentially within normal limits. Audiology consultation showed only a very mild high frequency hearing loss for which no further evaluation or treatment was necessary.